UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,589	12/19/2001	Julie Ann Ward	10019570-1	1727

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EXAMINER
VU, THONG H

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	10/027,589	WARD ET AL.
	Examiner	Art Unit
	Thong H Vu	2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 December 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _28 December 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 20050222

1.   Claims 1-20 are pending.

2.   This is a Continuation in part of US Application 09/707,227.

Double Patenting

3.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-41 of copending Application No. 09/707,227. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

('227) 1. A method comprising:

    designing an interconnect fabric for communication between a set of source nodes and a set of terminal nodes;

    generating an arrangement of flow-sets in the interconnect fabric in response to a set of flow requirements for the source and terminal nodes;

    determining one or more port violations in the source and terminal nodes which are associated with the arrangement of flow-sets;

    <u>alleviating at least one of the port violations by merging a pair of the flow-sets</u>.

(Application) 1. A method of providing reliability to an interconnect fabric for communication among a set of nodes, the method comprising: partitioning ports associated with each node into a first set of ports and a second set of ports; forming a first interconnect fabric among the first set of ports for each node in response to a set of flow requirements; and forming a second interconnect fabric among the second set of ports. (claim 2) generating arrangements of flow sets in response to the flow requirements, determining one or more port <u>violations with respect to the first set of ports for each node and alleviating at least one of the port violations by merging a pair of the flow sets</u>.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,3-11,13-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by Barker et al [Barker 6,766,381 B1].

4.   As per claim 11, Barker discloses A system for providing reliability to a design for

an interconnect fabric for communication between a set of nodes [Barker a network

switch, abstract], the system comprising:

a set of design information including a set of flow requirements for the

interconnect fabric [Barker, a first I/O port fabricated on said substrate, col 29 lines 15-

65]; and

a fabric design tool that generates a first design for the interconnect fabric among

of first set of ports for each node (i.e.: a traffic scheduler), the first design being in

response to the flow requirements, and that generates a second design for the

interconnect fabric among a second set of ports for each node [Barker, a traffic

scheduler, a second I/O port fabricated on said substrate, col 29 lines 15-65].

5.   As per claim 13, Barker discloses said set of nodes includes source nodes and

terminal nodes [Barker, VLAN, col 8 lines 14-26].

6.   As per claim 14, Barker discloses each node is associated with at least two ports

[Barker, egress, Ingress Fig 12B; input/output ports, col 29 lines 58-64].

7.   As per claim 15, Barker discloses said fabric design tool further partitions the

ports associated with each node into a number of additional sets of ports [Barker,

inserts and deletes, col 22 lines 1-13].

8.   As per claim 16, Barker discloses said fabric design tool forms additional

interconnect fabrics among the additional sets of ports [Barker, inserts and deletes, col

22 lines 1-13].

9.   As per claim 17, Barker discloses said fabric design tool forms said second

interconnect fabric in response to the set of flow requirements [Barker, a rich instruction

set includes conditional execution, col 9 lines 31-35].

10.   As per claim 18, Barker discloses said fabric design tool forms said second

interconnect fabric in a response to a relaxed set of flow requirements [Barker, a rich

instruction set includes conditional execution, col 9 lines 31-35].

11.   As per claim 19, Barker discloses when a source node or a terminal node has an

odd number of ports equal to 2n+1, the first set of ports for the node includes n+1 ports

and the second set of ports for the node includes n ports [Barker, inserts and deletes,

col 22 lines 1-13].

12.   As per claim 20, Barker discloses when a source node or a terminal node has

only one port, an interconnect device is coupled to the port [Barker, at least one port, col

6 lines 3-26].

13.   Claims 1,3-10 contain the similar limitations set forth in claims 11,13-20.

Therefore claims 1,3-10 are rejected for the same rationale set forth in claims 11,13-20.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Barker et al [Barker 6,766,381 B1] further in view of Tse et al [Tse 6,253,339 B1].

14.   As per claim 12, Barker discloses does not explicitly detail said fabric design tool

generates arrangements of flow sets in response to the flow requirements, determines

one or more port violations with respect to the first set of ports for each node and

alleviates at least one of the port violations by merging a pair of the flow sets.

A skilled artisan would have motivation to improve the interconnected fabric

performance and found Tse's teaching. Tse discloses a large network wherein the

alarm correlator includes means for merging two sets into one, [Tse, col 6 lines 1-28].

Therefore it would have been obvious to an ordinary skill in the art at the time the

invention was made to incorporate the technique of merging two set into one as taught

by Tse into the Barker's apparatus in order to utilize control instructions. Doing so would

provide a flexibility for handling the data path over a large network.

15.   Claim 2 contains the similar limitations set forth in claim 12. Therefore claim 2 is

rejected for the same rationale set forth in claim 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

16.   Claims 1-41 are rejected under 35 U.S.C. § 103 as being unpatentable over

Miller et al [Miller 6,212,568 B1] in view of Colton et al [Colton 5,138,657].

17.   As per claim 1, Miller discloses a method comprising:

designing an interconnect fabric for communication between a set of source

nodes and a set of terminal nodes [Miller, an object-oriented design approach, col 4

lines 20-26; interconnection between multiple RBNB modules, col 15 lines 10-22];

generating an arrangement of flow-sets in the interconnect fabric in response to a

set of flow (i.e.: traffic, data stream) requirements for the source and terminal nodes

[Miller, each RBO handles data streams, col 4 lines 27-55];

Miller also discloses monitor, analyze the control and status information [Miller,

col 5 lines 1-14; col 15 lines 9-21] and the multiple data sources merges into a single

stream [Miller, col 7 lines 24-45]. However Miller does not explicitly teach

determining one or more port violations in the source and terminal nodes which

are associated with the arrangement of flow-sets;

alleviating at least one of the port violations by merging a pair of the flow-sets.

It was well-known in the network art that a system detects a failure (or violation)
on the network then the merging control switches to different routes or alternate facilities
which interconnection to the system [Colton, By merging the control of the DACS and
the toll switch, it is possible to create a system which has greater flexibility in use of the
facilities interconnecting the DACS, col 8 lines 32-55].

Therefore, it would have been obvious to one having ordinary skill in the art at
the time the invention was made to incorporate the technique of merging the control of
DACS and the toll switch as taught by Colton into the Miller's apparatus in order to
utilize the monitoring and merging data streams processes. Doing so would provide a
dynamic and security to control and manage the data flow on the network.

18.   As per claim 2, Miller-Colton disclose generating a flow-set for each flow
requirement for the source and terminal nodes [Miller, data frame header which can
stream data, col 6 lines 49-60].

19.   As per claim 3, Miller-Colton disclose determining a number by which a set of
ports for the corresponding flow-sets exceed a set of available ports [Miller, exceed the
capacity of cache, col 11lines 45-60].

20.   As per claim 4, Miller-Colton disclose alleviating at least one port violation of the

source or terminal node for which the number is highest [Miller, the priority order, from

highest to lowest, col 13 line 63-col 13 line 17].

21.   As per claim 5, Miller-Colton disclose alleviating at least one port violation of the

source or terminal node for which the number is highest and for which the step of

merging also alleviates the source or terminal node for which the number is next highest

[Miller, the priority order, from highest to lowest, col 13 line 63-col 13 line 17].

22.   As per claim 6, Miller-Colton disclose alleviating at least one port violation of the

source or terminal node for which the number is highest and for which the step of

merging imposes a least cost [Miller, cost, col 6 lines 49-60;col 8 lines 9-18].

23.   As per claim 7, Miller-Colton disclose the least cost is based on a cost of an

interconnect device that carries the pair of flow-sets [Colton, interconnection with

stream, col 12 lines 19-42].

24.   As per claim 8, Miller-Colton disclose selecting the pair by determining a

feasibility of merging the pair [Miller, NBO retrieves data from multiple sources and

merges data into a single stream, col 7 lines 24-30].

25.   As per claim 9, Miller-Colton disclose determining whether an available

interconnect device has sufficient bandwidth to carry the pair of flow-sets [Colton, the

DACS interconnection fabric has a plurality of ports, col 14 lines 29-50; wideband and

broadband, col 18 lines 22-38].

26.   As per claim 10, Miller-Colton disclose determining whether an available

interconnect device has enough ports to carry the pair of flow-sets [Miller whether the

client request is satisfied, col 8 lines 19-26].

27.   As per claim 21, Miller-Colton disclose generating an arrangement of flow-sets

(i.e.: configuration) in the interconnect fabric is further in response to port availability

data, communication link data, and interconnect device data [Colton, configuration to

meet the special traffic condition, col 6 lines 29-52].

28.   As per claim 22, Miller-Colton disclose the port availability data includes data on

available communication ports for each source node and for each terminal node; the

communication link data includes data on bandwidth for communicating links of the

interconnect fabric, and the interconnect device data includes data on at least one

interconnect device that is communicatively linked to both the set of source nodes and

the set of terminal nodes [Miller, monitor the data sources via buffers allowing

interconnection between multiple RBNB modules, col 15 lines 10-22].

29.   As per claim 23, Miller-Colton disclose generating an arrangement of flow-sets in

the interconnect fabric is further in response to cost data that includes costs for.

communicating links, costs for interconnect devices, and costs for ports of the source

nodes and the terminal nodes [Miller, cost, col 6 lines 49-60;col 8 lines 9-18].

30.   As per claims 24,38 Miller-Colton disclose a port violation in the source or

terminal nodes is equal to a number of required physical communication links to the

node minus a number of available ports in the node as inherent feature of detecting the

facilities outages and rearrange facilities to different routes [Colton, col 8 lines 32-55].

31.   As per claims 25, 39 Miller-Colton disclose a port violation in the source or

terminal nodes is equal to a number of flow-sets to the node minus a number of

available ports in the node as inherent feature of interconnection detecting the facilities

outages and rearrange facilities to different routes [Colton, col 8 lines 32-55].

32.   As per claim 11, Miller-Colton disclose a system comprising a set of design

information including a set of flow requirements for an the interconnect fabric;

        fabric design tool for designing the interconnect fabric for communication

between a set of source nodes and a set of terminal nodes wherein the fabric design

tool generates a design for the interconnect fabric in response to the design information

by generating an arrangement of flow-sets in response to the flow requirements [Miller,

an object-oriented design approach, col 4 lines 20-26; interconnection between multiple

RBNB modules, col 15 lines 10-22; each RBO handles data streams, col 4 lines 27-55] and determining one or more port violations in the source and terminal nodes which are associated with the arrangement of flow-sets and alleviating at least one of the port violations by merging a pair of-the flow-sets [Colton, By merging the control of the DACS and the toll switch, it is possible to create a system which has greater flexibility in use of the facilities interconnecting the DACS, col 8 lines 32-55].

33.   Claims 12-20,29-36 contain the similar limitations set forth of claims 2-10,23-28. Therefore, claims 12-20,29-36 are rejected for the similar rationale set forth in claims 2-10,21-28.

34.   As per claim 37, Miller-Colton disclose a computer-readable medium having computer-readable program code to perform:

designing an interconnect fabric of a network for communication between source nodes and terminal nodes using at least one interconnect device communicatively coupled between at least one source node and one terminal node [Miller, an object-oriented design approach, col 4 lines 20-26; interconnection between multiple RBNB modules, col 15 lines 10-22]:

receiving design information comprising flow requirement data, including bandwidth data, for the source nodes and the terminal nodes, port availability data for the source and terminal nodes, communication link data for communication links

connecting the interconnect fabric, and interconnect data for the interconnect device

[Miller, each RBO handles data streams, col 4 lines 27-55];

generating, using the design information, a plurality of flow-sets that

communicatively couple the source nodes and terminal nodes, identifying at least one

port violation in one of the source nodes and terminal nodes, and merging at least one

flow-set into another flow set to alleviate the at least one port violation [Colton, By

merging the control of the DACS and the toll switch, it is possible to create a system

which has greater flexibility in use of the facilities interconnecting the DACS, col 8 lines

32-55].

35.   As per claim 40, Miller-Colton disclose merging at least one flow-set into another

flow set to alleviate the at least one port violation is repeated to complete the design of

the interconnect fabric as inherent feature of detecting the facilities outages and

rearrange facilities to different routes [Colton, col 8lines 32-55].

36.   As per claim 41, Miller-Colton disclose the repetition continues until all port

violations are eliminated or until no further mergers are possible as inherent feature of

detecting the facilities outages and rearrange facilities to different routes [Colton, col

8lines 32-55].

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

-US 6,148,000 Feldman discloses a switching apparatus provides Two types of

merging techniques are introduced: Virtual Path merge (VP-merge) or Virtual

Connection merge (VC-merge).

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to examiner Thong Vu, whose telephone number is (571)-
272-3904. The examiner can normally be reached on Monday-Thursday from 8:00AM-
4:30PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, *Jack Harvey*, can be reached at (571) 272-3896. The fax number for the
organization where this application or proceeding is assigned is 703-872-9306

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Thong Vu
Patent Examiner
Art Unit 2142